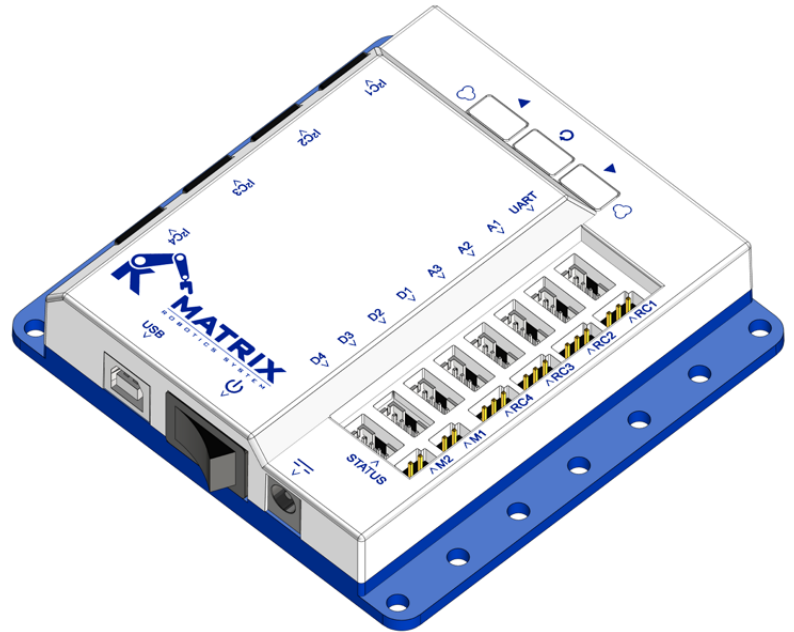


1. Feature

- Support 4 channel RC Servo control.
- Support 2 channel DC motor control.
- Support 4 channel I2C Interface.
- Support 8 channel GPIO.

2. Application

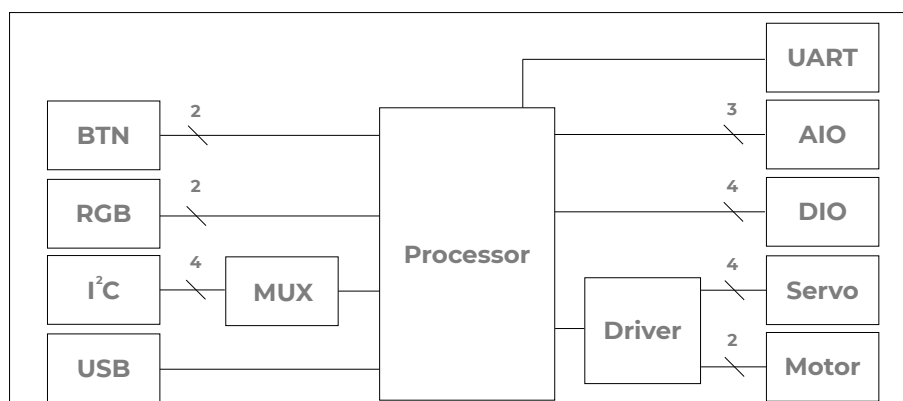
- Line follower tracker.
- Robot arm.
- Automatic device



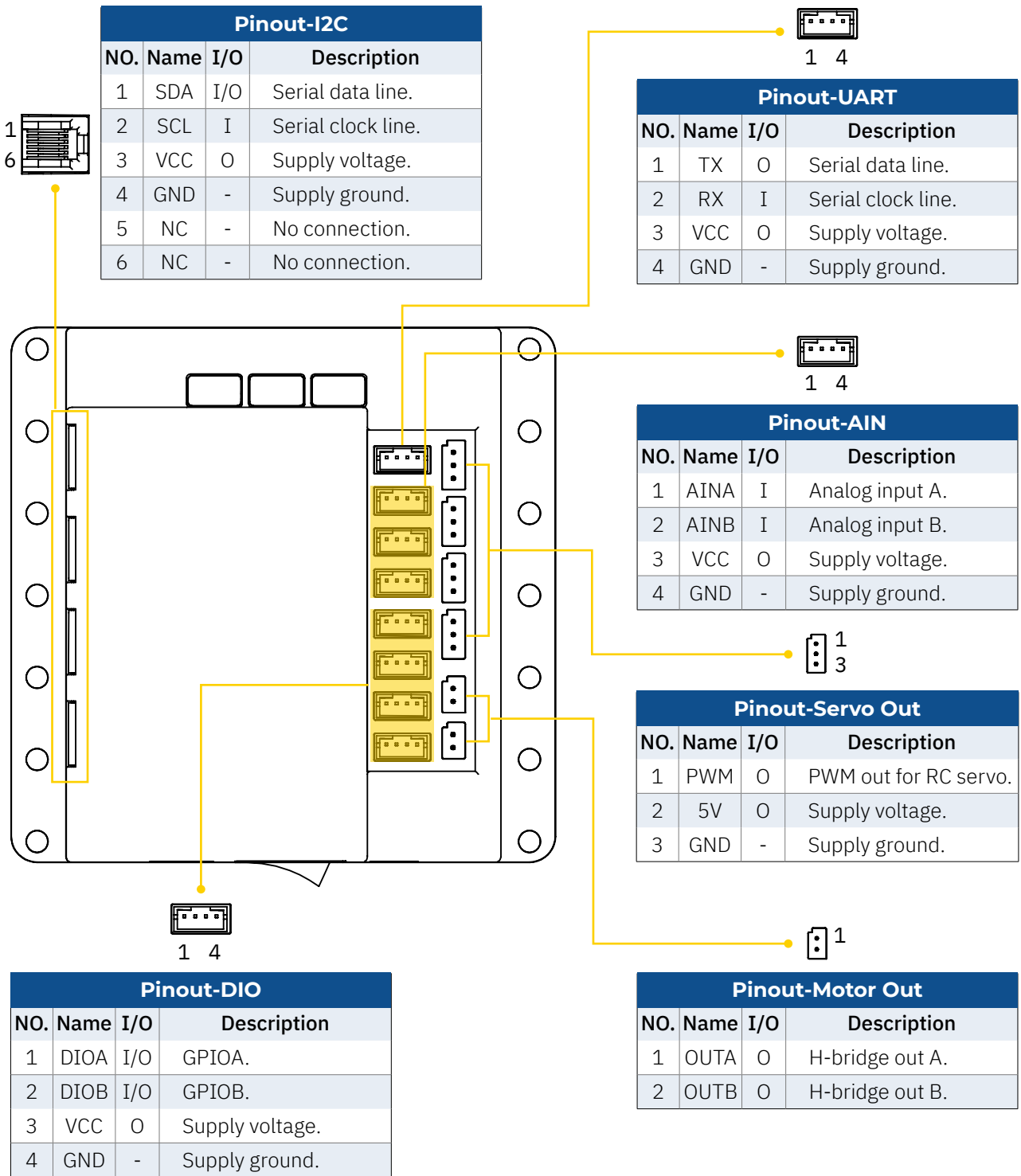
3. Introduction

MATRIX Mini is an Arduino based robot controller. With the MATRIX building system, you can make tons of projects. From basic tracking car to omni-directional mobile platform, you can make any ideas comes out of your mind.

4. Block Diagram



5. Pinout 5.1. Matrix Mini Pinout



5.2. Arduino Pin Mapping

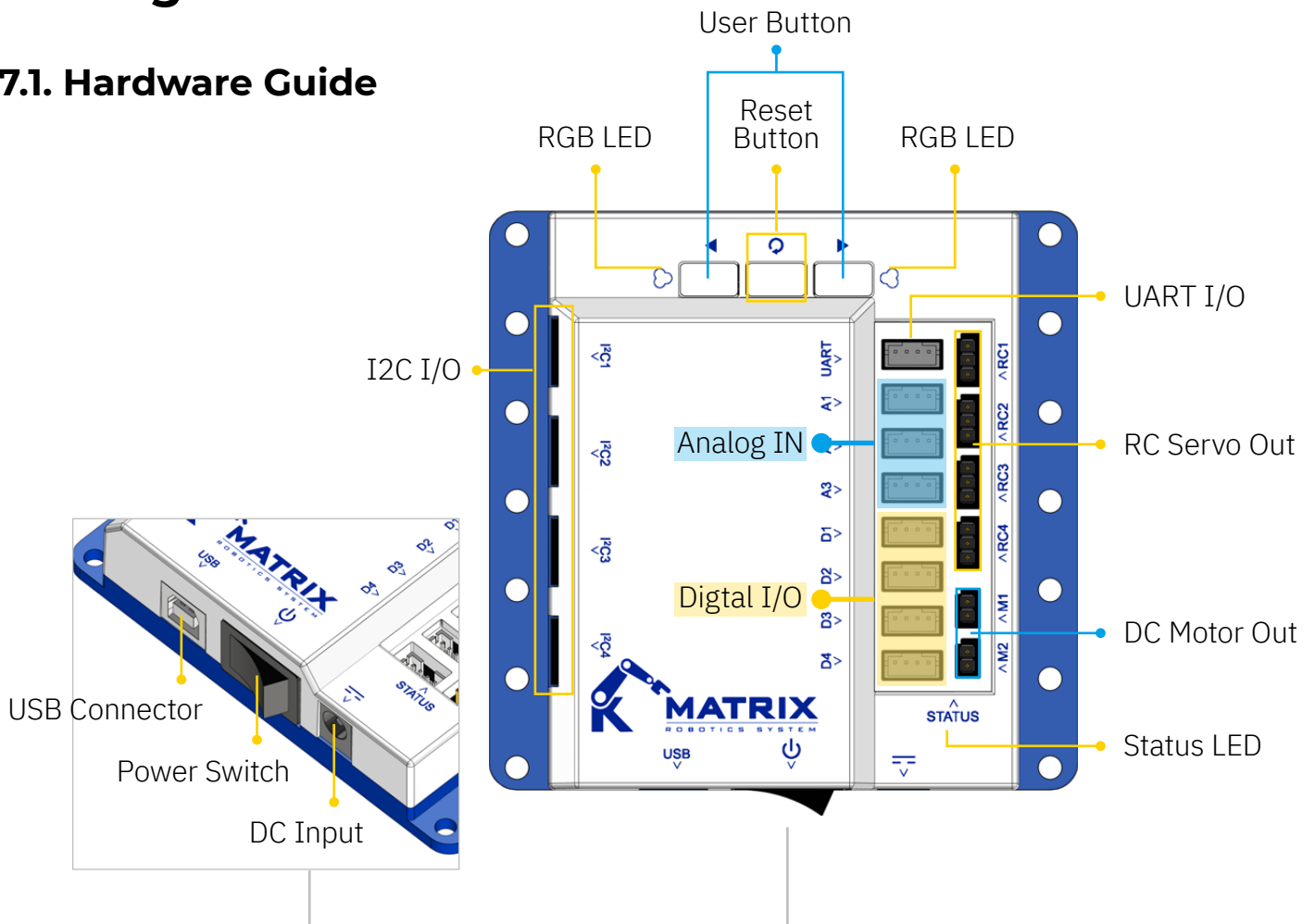
	Matrix Mini	ATMega328p	Arduino
D1	D1A	PD5	5
	D1B	PD6	6
D2	D2A	PD7	7
	D2B	PB1	9
D3	A1A	PB2	10
	A1B	PB3	11
D4	A1A	PB4	12
	A1B	PB5	13
A1	A1A	PC2	16
	A1B	PD4	4
A2	A1A	PC0	14
	A1B	PC1	15
A3	A1A	ADC6	A6
	A1B	ADC7	A7
UART	TX	PD1	1
	RX	PD0	0
I2C	SDA	PC4	SDA
	SCL	PC5	SCL
BTN	BTN1	PD3	3
	BTN2	PD2	2
	RC	External IC	-
	DC	External IC	-
	RGB	External IC	-

6. Electrical Characteristics

Parameter	Min	Typ	Max	Units
Input Voltage	6	-	24	V
I/O Voltage	-	5	-	V
Digital I/O Pin Current	-	-	33	mA
Analog In Pin Current	-	-	5	mA
RC Servo Output Voltage	-	5	-	V
DC Motor Output Voltage	-	5	-	V
RC Servo Output Current	-	-	2	A
DC Motor Output Current	-	-	2	A
UART Baud	300	9600	115200	bit/s
I2C operating speed	100	-	400	KHz
I2C Low-Level Input Voltage	-0.5V	-	0.33*VCC	-
I2C High-Level Input Voltage	0.7*VCC	-	VCC	-
LED R Wavelength	617	-	627	nm
LED G Wavelength	515	-	525	nm
LED B Wavelength	464	-	474	nm
USB Type-B Speed	-	12	-	MB/s

7. Usage

7.1. Hardware Guide

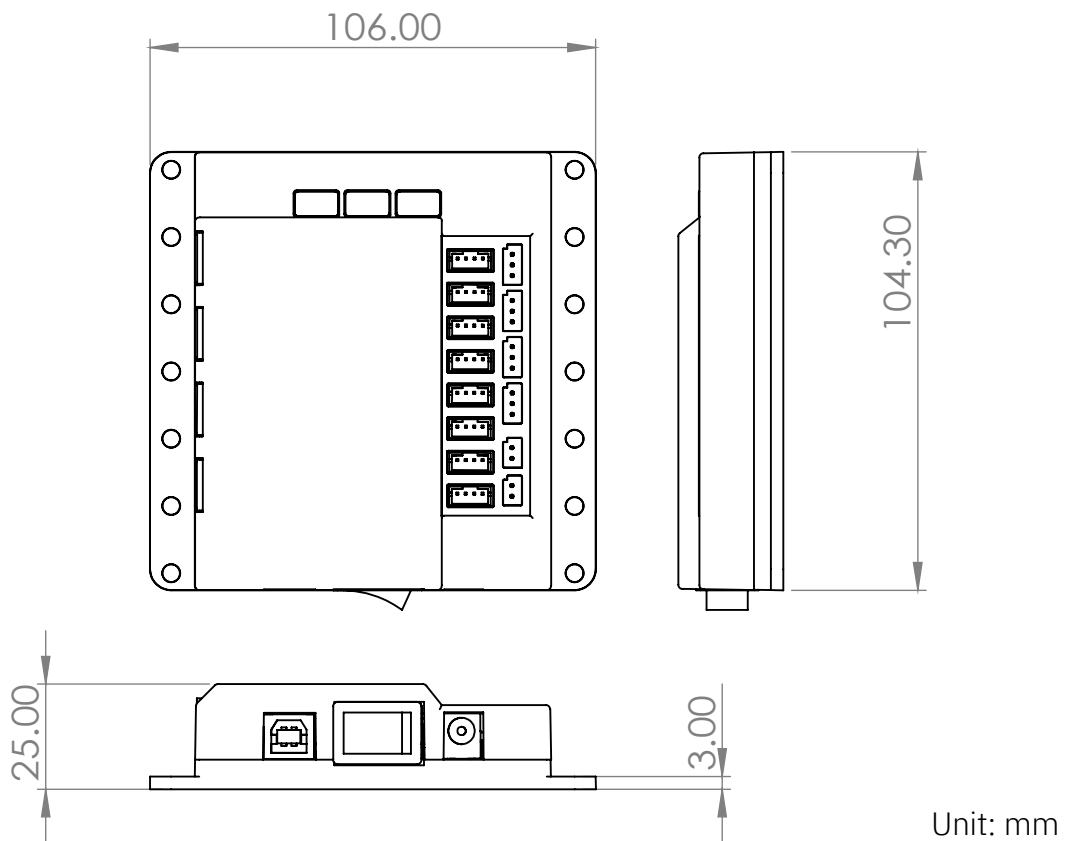


7.2. Software API

- Open Arduino IDE(At least v1.6.12)
- Open the Boards Manager from the Tools -> Board menu and select "Arduino Uno"
- Open the Library Manager from the Sketch-> Include Library -> Manage Libraries and search "Matrix Mini Library"

For further information and example code please checkout our github page <https://matrix-robotics.github.io/MatrixMini/>

8. Dimensions



9. Disclaimer

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